

Work Order ID 78448

January-10-12 9:27:32 AM

78448

Page 1

Item ID: D206-642-341

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Replacement Skidtube

Start Date: 10/01/2012 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 25/01/2012 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: M.L.J Date: 12/01/10 Tooling: Date:

Run Start *NR1*

QC: Date: SPC (Y/N): Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
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D2650	F
-------	---

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels per PPP D206-642-341 CHG003

N/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 78448***78448***

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January-10-12 9:27:32 AM

Item ID: D206-642-341 Accept ***N9000040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Replacement Skidtube
Start Date: 10/01/2012 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 25/01/2012 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Skidtubes	0.00							
110									
Skidtubes	Memo	0.00							
Skidtubes	1-Deburr Fwd edge of tube								
	2-Remove ridge on inside of Fwd edge of tube as per Dwg D2650								
	3-Weld Fwd Cap as per Dwg D2650. Use aluminum rod. Grind D2647 to fit as required. A/RAluminum Rod <u>M119785 / M119712</u>								
	4-Grind weld flush to cap on top surface only.								
	5-Cut aft end to length as per dwg D2650								
	6-Drill pilot holes using drill Jig DT8168A (A,& B) and DT8025. Open to Ø0.312"								
	7-Drill holes for wearplates using DT 8028-5. Open to Ø 0.297".								
	8-Open Aft Cap Hole using #6 Drill Bit								
	9-Open holes for Tow Ring to Ø0.625" as per Dwg D2650, D2650-5 Drilling Detail								
	10-Remove inner indexing ridge on aft end of skidtube as per Dwg D2650								
	11-Deburr and Blow out all chips form inside the tube								

Handwritten notes:
SAD 12-01-16
SAD 12-01-16
SAD 12-01-16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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N900040100Setup Start ***NS1***

Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 10/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 25/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____

Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

115

QC5- Inspect part completeness to step on W/O

0.00

115

QC

Memo

0.00

Quality Control

120

Chemical Conversion Coat per QSI005 4.1

0.00

120

HandFinish

Memo

0.00

Hand Finishing

125

QC3- Inspect Part Finish

0.00

125

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Replacement Skidtube

Start Date: 10/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 25/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

130

Skidtubes

0.00

Skidtubes

Memo

1-Open holes to finished size as per Dwg D2650, D2650-5 Drilling Detail
(without cutting fluid)

2-Countersink crossbolt spacer holes as per Dwg D2650(without cutting fluid)

3-Deburr. Blow out chips. Grind alodine off around crossbolt spacer.

4-Bond D2654-5 web in place as per QSI 015Ensure holes line upAllow 12 Hrs.
cure time before cuttingStart Date: 12-01-17 Time: 5:10Finish Date: 12-01-18 Time: 3:00A/RSikaflex-291 M119508Sikaflex expiry date: 2012-08-13

SAD 12-01-17

SAD 12-01-17

140

QC5- Inspect part completeness to step on W/O

0.00

140

QC

Memo

0.00

Quality Control

1 0 BE 12-01-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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N900040100

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Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 10/01/2012 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 25/01/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

0.00

150

Skidtubes

Skidtubes

Memo

0.00

1-Prep per QSI 005 and Insert cross bolt spacers D2649. Weld as per QSI 004 and Dwg D2650. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod.
A/RAluminum Rod M119785 BE 12-01-18

2-Grind welds flush as per Dwg D2650. Masking Tape access to inside of the Skidtube

3-Counterbore 5/16" x 0.750" deep as per Dwg D2650Debur

4- Install nut plate as per dwg

SAO 12-01-19
DD

170

QC10- Inspect visual per QSI004- ground welds

0.00

170

QC

Memo

0.00

Quality Control

512/21123

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 10/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 25/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

180

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

012101/23

Memo

0.00

190

190

HandFinish

Hand Finishing

Pressure Wash per QSI005 4.3

0.00

Memo

0.00

Brush alodine tube on crossbolt spacer area, do not acid etch, do not dip tube in tank.

1X Ø M-L 12/01/23

200

200

Powdercoat

Powder Coating

White Gloss (Ref: 4.3.5.1) per QSI005 4.3-Alum

0.00

Memo

0.00

START TIME:
OVEN TEMPERATURE:
FINISH TIME:

Prime M 117319
Delft Blue M 118395
Clear Delft M 118093

12 01 23 (1)

spry paint

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Item ID: D206-642-341

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N900040100Setup Start ***NS1***

Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 10/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 25/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210

QC - Inspect Part Finish

0.00

210

QC

QC14
Memo

0.00

Quality Control

① 12.01.24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Work Order ID 78448

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January-10-12 9:27:32 AM

Item ID: D206-642-341

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Replacement Skidtube

Stop *NS2*

Start Date: 10/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 25/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

0.00

220

HandFinishing

HandFinish

Memo

0.00

Hand Finishing

1-Install inserts & wearpads as per dwg D2922. Use a drop of Sikaflex inside insert holes before installing wearpad/wearplate.

A/RSikaflex-291 1119443
Sikaflex expiry date: 12161

2-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install plugs as per Dwg D2650. Clean excess adhesive

3-Install MS27039-4-06 Screw

4-Inspect for foreign object per QSI 024

5-Install D2646 Aft Cap and seal with SikaflexClean excess adhesive

A/RSikaflex-291 11119413
Sikaflex expiry date: 1216P

6-Wing Walk as per Dwg D2650-5 and QSI 005 4.4

Batch: 112012

1 0 24 12/01/12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

Work Order ID 78448

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January-10-12 9:27:32 AM

Item ID: D206-642-341 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Replacement Skidtube
 Start Date: 10/01/2012 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 25/01/2012 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230	QC3- Inspect Part Finish	0.00							
230									
QC	Memo	0.00							
Quality Control									
240	QC5- Inspect part completeness to step on W/O	0.00							
240									
QC	Memo	0.00							
Quality Control									
250	Packaging	0.00							
250									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D206-642-341								
	Location: _____								
	PPP Rev: _____								

PP- 78460 SP12-01-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Work Order ID 78448***78448***

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January-10-12 9:27:32 AM

Item ID: D206-642-341

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Replacement Skidtube

Start Date: 10/01/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 25/01/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

QC21- Final Inspection - Work Order Release

0.00

260

QC

Memo

0.00

Quality Control

12/1/25

ME
12-01-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

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Page 1

Work Order ID: 78448

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Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 10/01/2012

Required Date: 25/01/2012

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP Rev: H05.10.11 Added D3429-1 per CHG004KJ/CP/JLM
 IPP Rev: I 08-09-29 revF as per dwg DD verified by: EC Est Rev: J 09-03-02 as per DS19440 rev.a DD verified by: EC IPP rev K 10.08.03 chg ms27039-1-08 for "C" type EC verified by DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN960JD416	NAS1149D0463J	Purchased	No				Each	0.0000		1			
AN960JD416										**	M118384(1) M 12/01/25		
Washer													
CCR264SS3-3		Purchased	No				Each	947.0000		2			
CCR264SS3-3										**	SAD 12-01-19		
Cherry Rivet													
				<u>Location</u>			<u>Loc Qty</u>			<u>Loc Code</u>			
				ST331			947						
				113973			2						
				117849			139						
				119017			806			2			
CR3212-4-03		Purchased	No				Each	1,716.000		2			
CR3212-4-03										**	SAD 12-01-19		
Cherry Rivet													
				<u>Location</u>			<u>Loc Qty</u>			<u>Loc Code</u>			
				FP002			724						
				114859			724			2			
				ST331			992						
				110139			2						
				119017			990						

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Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 10/01/2012

Required Date: 25/01/2012

Start Qty: 1.00

Required Qty: 1.00

D2620

Manufactured No

Each 25.0000

1

D2620

Skidtube, 206 Skidtube

**

SAD 12-01-16

Location

Loc Qty

Loc Code

LG

25

71616

1

71617

6

75587

2

76815

3

76817

10

76819

3

D2647

Manufactured No

Each 161.0000

1

D2647

Cap

**

SE2-01-16

Location

Loc Qty

Loc Code

LG002

161

73826

52

75482

109

W/O:		WORK ORDER CHANGES					
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Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 10/01/2012

Required Date: 25/01/2012

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

Each

637.0000

19

D2649

Cross Bolt Spacer

**

BE 12-01-18

Location

Loc Qty

Loc Code

LG

400

77574

400

19

LG001

237

65317

1

68224

2

68507

11

71355

2

72704

2

72841

11

73390

8

73857

21

73858

53

73859

4

73860

4

76793

118

D2654-5

Manufactured No

Each

0.0000

D2654-5

Web

B78832

**

1

SAD

12-01-12

D2680-041

Manufactured No

Each

140.0000

D2680-041

Nut Plate

**

1

SAD

12-01-19

Location

Loc Qty

Loc Code

ST013

44

75479

44

1

ST019

96

76790

96

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Shop Packet Print

Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 10/01/2012

Required Date: 25/01/2012

Start Qty: 1.00

Required Qty: 1.00

MS27039C1-08

Purchased

No

Each

766.0000

56

MS27039C1-08

SCREW

56 12/01/24

Location

Loc Qty

Loc Code

FP002

1

116022

1

ST293

765

116373

3

118077

150

118159

500

119309

112

x56

ALS4-1032-130

Purchased

No

220

Each

1,684.000

54

54

AI S4-1032-130

Insert

54 12/01/24

Location

Loc Qty

Loc Code

ST280

1589

119084

1589

ST281

95

119632

95

x54

AN960C10L

NAS1149C0332
R

Purchased

No

220

Each

0.0000

54

54

***AN960C10I ***

washer

1119736 (x54) 12/01/24

AN960JD10L

NAS1149D0332I

Purchased

No

220

Each

0.0000

2

2

***AN960.ID10I ***

Washer

1119042 (x2) 12/01/24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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January-10-12 9:27:37 AM

Page 5

Work Order ID: 78448

78448

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 10/01/2012

Required Date: 25/01/2012

Start Qty: 1.00

Required Qty: 1.00

D2646

Manufactured No

220

Each

122.0000

1

1

D2646

Aft Cap

**

ml 12/01/24

Location

Loc Qty

Loc Code

FP002

122

62678

5

68280

5

70945

1

71038

4

71070

2

73294

1

73825

104

x1

D2651-1

Manufactured No

220

Each

177.0000

14

14

D2651-1

Plug

**

ml 12/01/24

Location

Loc Qty

Loc Code

FP001

177

57869

1

66445

10

69018

2

70839

2

71037

31

73827

131

x14

D2651-3

Manufactured No

220

Each

2,667.000

14

14

D2651-3

O-Ring

**

ml 12/01/24

Location

Loc Qty

Loc Code

FP001

667

61962

12

73828

655

FP-A

2000

78126

2000

x14

January-10-12 9:27:37 AM

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Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 6

Work Order ID: 78448

78448

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 10/01/2012

Required Date: 25/01/2012

Start Qty: 1.00

Required Qty: 1.00

D3535-11	Manufactured	No	220	Each	18.0000	1	1	
D3535-11								
Wearshoe								

**

ml 12/01/24

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	18	
70879	5	<i>x1</i>
71284	13	

D3535-23	Manufactured	No	220	Each	34.0000	1	1	
D3535-23								
Wearshoe								

**

ml 12/01/24

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	34	
73314	23	<i>x1</i>
74508	11	

D3535-35	Manufactured	No	220	Each	21.0000	1	1	
D3535-35								
Wearshoe								

**

ml 12/01/24

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP001	21	
67598	1	
70815	1	
73311	7	<i>x1</i>
74509	12	

D3536-11	Manufactured	No	220	Each	14.0000	1	1	
D3536-11								
Gasket								

**

ml 12/01/24

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	14	
46649	1	
46715	4	
65574	1	
71283	8	<i>x1</i>

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Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval. Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 7

Work Order ID: 78448

78448

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 10/01/2012

Required Date: 25/01/2012

Start Qty: 1.00

Required Qty: 1.00

D3536-23	Manufactured	No	220	Each	33.0000	1	1	
D3536-23						**		12/01/2012
Gasket								

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	33	
43406	1	
73312	20	X1
74510	12	

D3536-35	Manufactured	No	220	Each	32.0000	1	1	
D3536-35						**		12/01/2012
Gasket								

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	32	
73313	14	X1
74511	18	

D3537-1	Manufactured	No	220	Each	56.0000	6	6	
D3537-1						**		12/01/2012
Wearpad								

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	56	
69817	5	
77036	51	X6

D3537-3	Manufactured	No	220	Each	12.0000	1	1	
D3537-3						**		12/01/2012
Wearpad								

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
FP002	12	
76986	12	X1

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 8

Work Order ID: 78448

78448

Parent Item: D206-642-341

D206-642-341

Parent Item Name: Replacement Skidtube

Start Date: 10/01/2012

Required Date: 25/01/2012

Start Qty: 1.00

Required Qty: 1.00

MS27039-4-06

Purchased

No

220

Each

296.0000

1

1

MS27039-4-06

Screw

**

12/01/2012

Location

Loc Qty

Loc Code

ST292

296

119075

296

X1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -1	QTY -3	QTY -5	QTY -7	PART NUMBER	DESCRIPTION
X				D2650-1	SKIDTUBE ASSEMBLY
	X			D2650-3	SKIDTUBE ASSEMBLY
		X		D2650-5	SKIDTUBE ASSEMBLY
			X	D2650-7	SKIDTUBE ASSEMBLY
1	1	1	1	D2600-1-160	EXTRUSION
1				D2654-1	WEB
	1			D2654-3	WEB
		1		D2654-5	WEB
			1	D2654-7	WEB
1	1	1	1	D2646	AFT CAP
1	1	1	1	D2647	CAP
17	18	19	23	D2649	CROSS BOLT SPACER
16	18	14	22	D2651-1	PLUG
16	18	14	22	D2651-3	O-RING
1	1	1	1	D2680-041	NUT PLATE
2	2			D3286-1	DOUBLER
2	2			D3286-3	STUD
42	44	54	60	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, ALS7-1032-130)
2	2	2	2	AN960JD10L	WASHER
2	2	2	2	CCR264SS3-3	RIVET
2	2	2	2	CR3212-4-03	RIVET
2	2	2	2	MS27039-1-08	SCREW
1	1	1	1	MS27039-4-06	SCREW
1	1	1	1	AN960JD416	WASHER
52	52			CR3212-4-04	RIVET

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RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 78448 42.5
12/01/10

RELEASED
08-27-23

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
-BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 11) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)
- 12) DRILL Ø0.297 FOR ALS7-1032-130 INSERTS USING TEMPLATE DT8056-1 ON -1 TUBE, DT8056-3 ON -3 TUBE, DT8056-5 ON -5 TUBE, AND DT8056-7 ON -7 TUBE. INSTALL INSERTS AFTER FINISH.
- 13) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

F	DRAWING UPDATED TO CURRENT STANDARDS. SHT 6 ADDED. ALL SECTION AND DETAIL VIEWS TRANSFERRED TO SHT 6. SHT 1 IN PL PART D2649 QTY UPDATED. SHT 6 SECT C-C GRIND INSTRUCTIONS DELETED FROM NOTE 7 (SEE NCR 239).	AJS	08.08.08
E	REMOVE CBORE, CHG DRILL, ADD CHAMFER	CP	06.03.30
D	REDRAW; INCORP. DE09136/9153/9163 MOD GROUND HANDLING ON D2650-1/-3	CP	04.05.17
C	CHANGE HOLE PATTERN AND FRONT END	DS	97.10.29
B	AS MANUFACTURED CHANGES	DS	97.06.26
A	NEW ISSUE	DS	97.03.25
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE USA, INC PORT HADLOCK, WA	
DRAWN	AJS		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. F
MFG. APPR.	<i>[Signature]</i>	D2650	SHEET 1 OF 6
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	206/407 SKIDTUBE ASSEMBLIES	NTS
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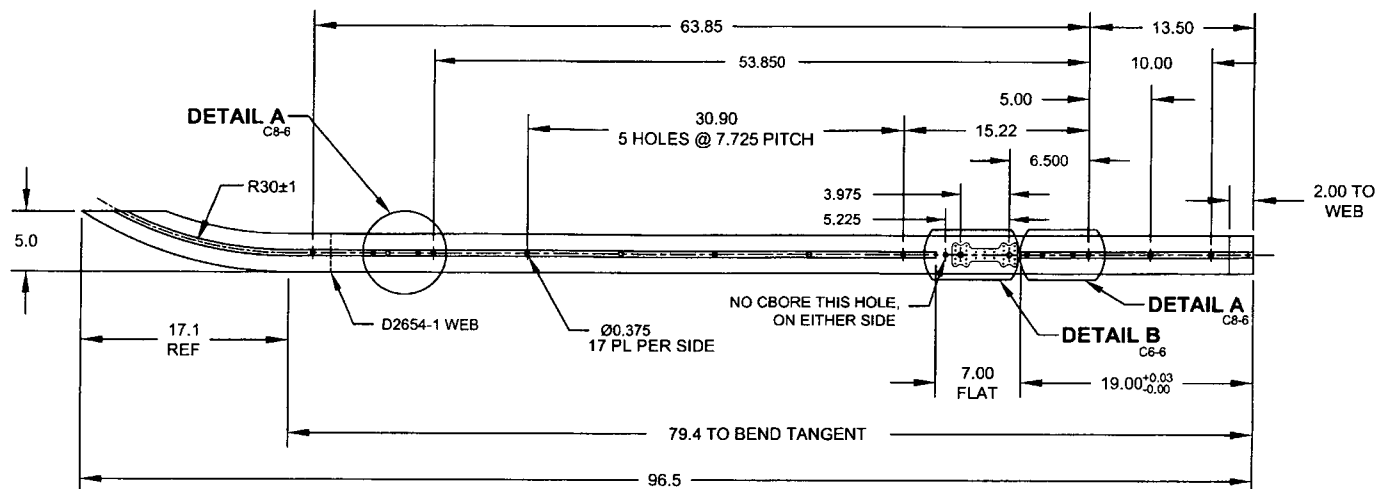
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

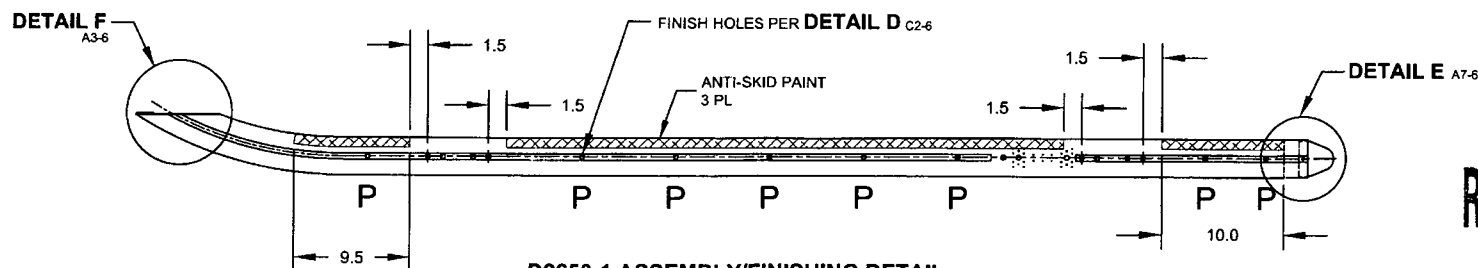
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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D2650-1 BENDING/DRILLING DETAIL



D2650-1 ASSEMBLY/FINISHING DETAIL

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680722/114

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DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 2 OF 6
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

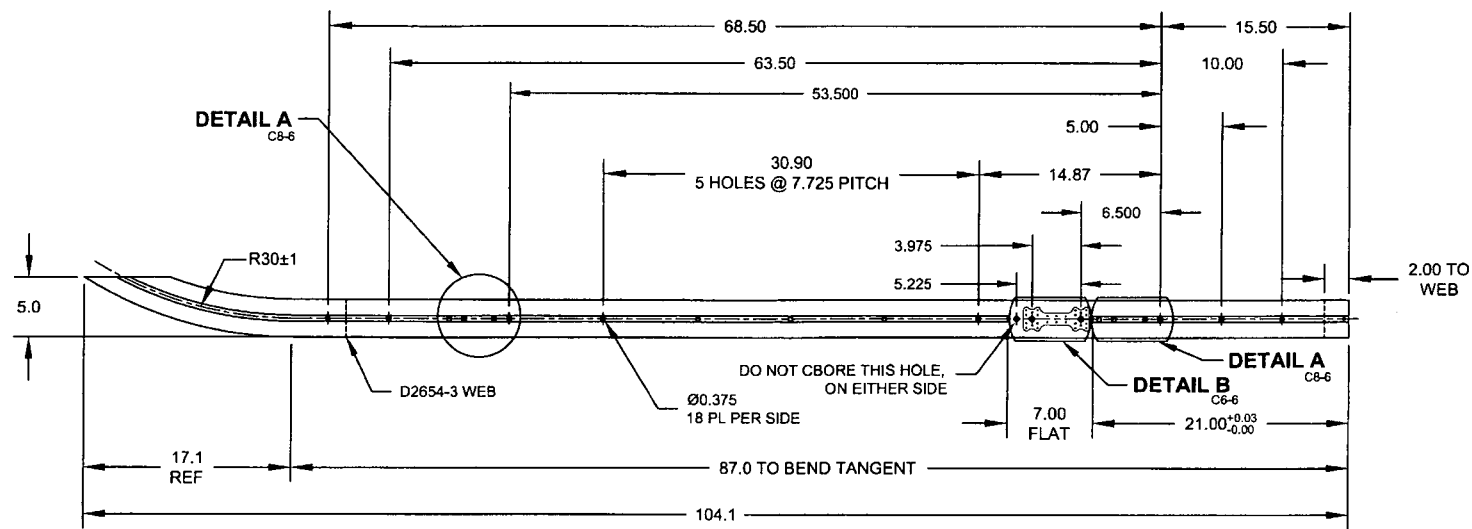
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

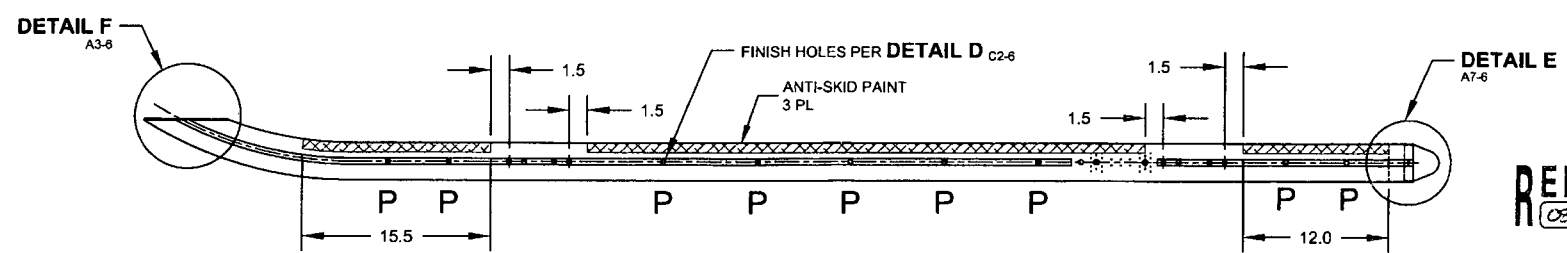
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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D2650-3 BENDING/DRILLING DETAIL



D2650-3 ASSEMBLY/FINISHING DETAIL

DESIGN	DS	DART AEROSPACE USA, INC	
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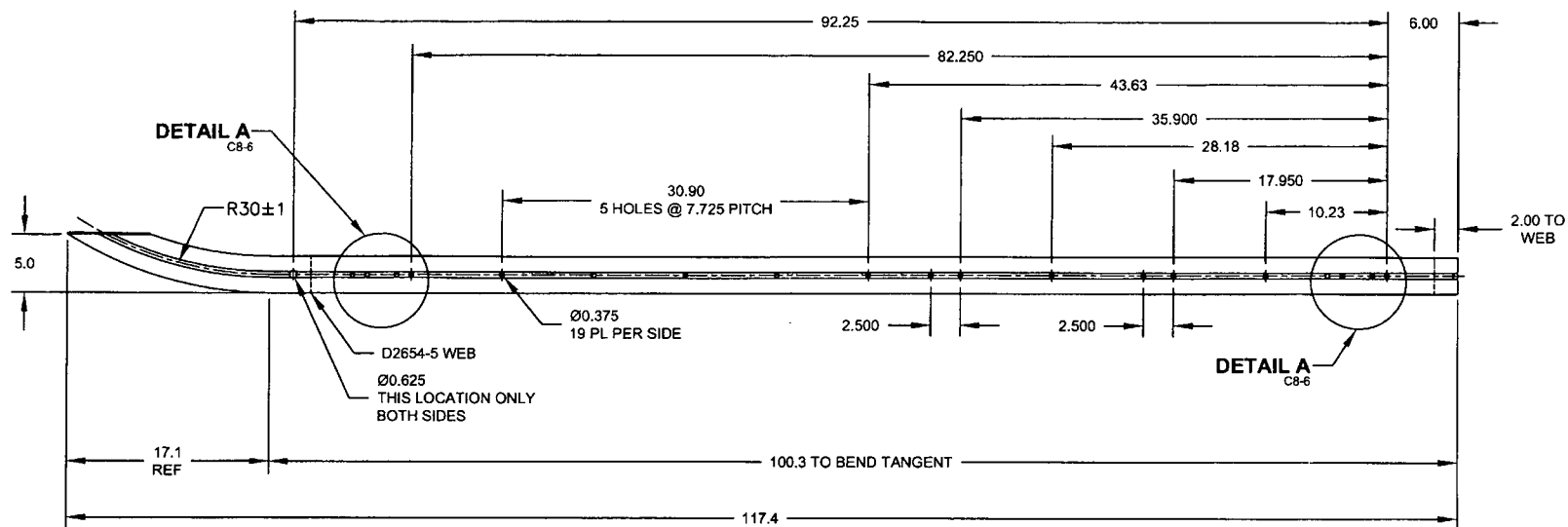
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR: Yes No** **DQA:** _____ **Date:** _____
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

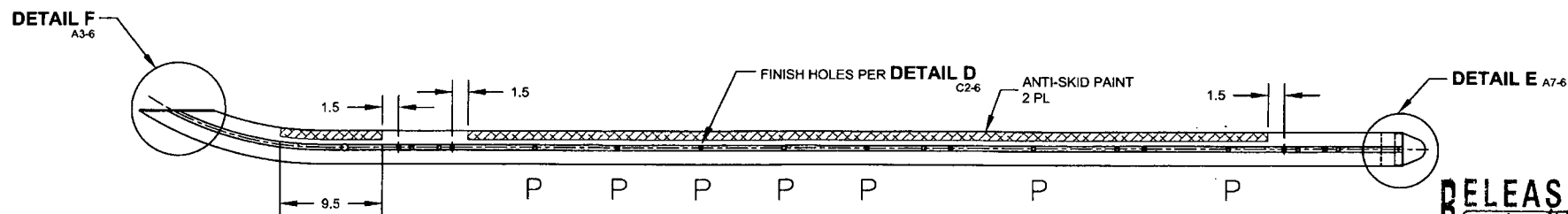
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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D2650-5 BENDING/DRILLING DETAIL



D2650-5 ASSEMBLY/FINISHING DETAIL

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Technical drawing of a structural member, likely a beam or plate, showing dimensions and details. The drawing includes a top view with a curved end and a side view with a straight end. Key dimensions and features include:

- Top View Dimensions:**
 - Overall length: 138.6
 - Distance from REF to bend tangent: 121.5
 - Distance from REF to end: 17.1
 - Distance from end to first detail: 106.00
 - Distance from first detail to second detail: 99.75
 - Distance from second detail to third detail: 93.50
 - Distance from third detail to fourth detail: 82.250
 - Distance from fourth detail to fifth detail: 43.63
 - Distance from fifth detail to sixth detail: 35.900
 - Distance from sixth detail to seventh detail: 28.18
 - Distance from seventh detail to eighth detail: 17.950
 - Distance from eighth detail to ninth detail: 10.23
 - Distance from ninth detail to end: 2.00 TO WEB
- Side View Dimensions:**
 - Overall height: 5.0
 - Distance from REF to end: 17.1
 - Distance from end to first detail: 106.00
 - Distance from first detail to second detail: 99.75
 - Distance from second detail to third detail: 93.50
 - Distance from third detail to fourth detail: 82.250
 - Distance from fourth detail to fifth detail: 43.63
 - Distance from fifth detail to sixth detail: 35.900
 - Distance from sixth detail to seventh detail: 28.18
 - Distance from seventh detail to eighth detail: 17.950
 - Distance from eighth detail to ninth detail: 10.23
 - Distance from ninth detail to end: 2.00 TO WEB
- Details:**
 - DETAIL A C8-6:** Two circular details are shown, one on each side of the member.
 - Ø0.625 THIS LOCATION ONLY BOTH SIDES:** Dimension for the diameter of the circular details.
 - Ø0.375 23 PL PER SIDE:** Dimension for the diameter of the holes in the plate.
 - 5 HOLES @ 7.725 PITCH:** Dimension for the pitch of the holes.
 - D2654-7 WEB:** Dimension for the web of the member.
 - R30±1:** Dimension for the radius of the curved end.

DETAIL F
A3-6

1.5

1.5

FINISH HOLES PER DETAIL D C2-6

ANTI-SKID PAINT
3 PL

1.5





1.5

DETAIL E
A7-6

P P P P P P P P P P

23.3

10.0

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W/O:		WORK ORDER CHANGES					
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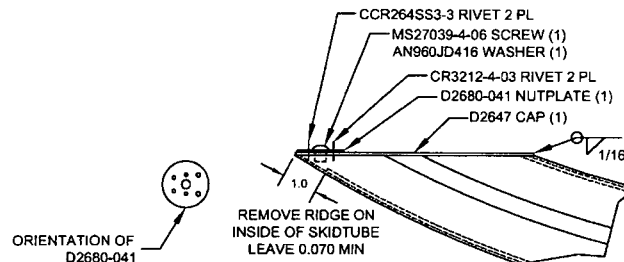
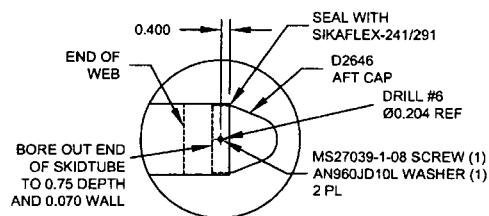
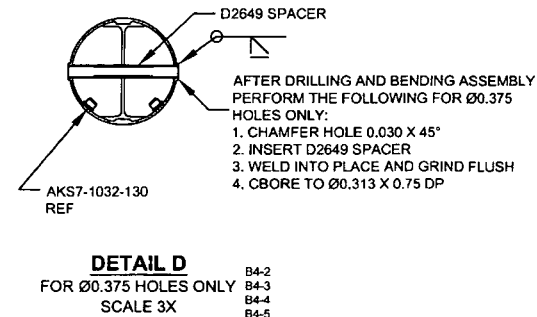
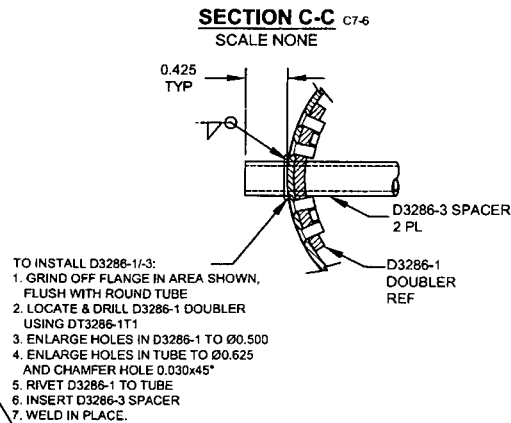
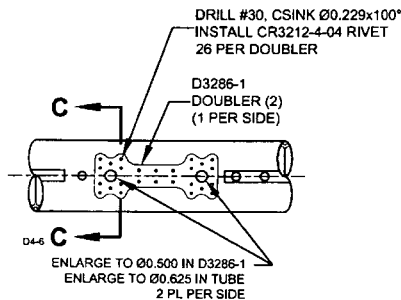
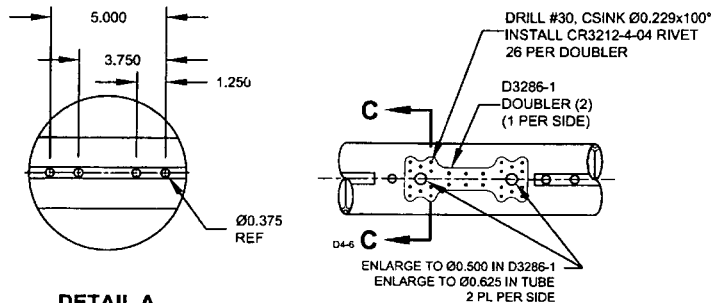
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

78448



DETAIL F NOTES:
1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D2647 (TRIM AS NECESSARY)
4. WELD D2647 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D2680-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D2680-041 PRIOR
TO FINISH

RELEASED
05-09-2018

DESIGN	DS	DART AEROSPACE USA, INC	
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CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 6 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 278

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: 766119
Part number: 206-642-151
Description: 206 skid tube
Welding Process: Tig ☒ Mig ☐
Base material: Aluminum
Current: AC ☒ DC ☐

TEST REQUIREMENTS AND RESULTS

Visual: pass ☒ fail ☐
Penetration: pass ☒ fail ☐

UNACCEPTABLE

Cracks: pass ☒ fail ☐
Undercut: pass ☒ fail ☐
Pin holes: pass ☒ fail ☐
Overlap (cold lap): pass ☒ fail ☐
Porosity (surface): pass ☒ fail ☐
Coloration: pass ☒ fail ☐

Qualifier Pat. Dunn Date of Test Coupon 11-12-20
Welder Barclay Elliot Date of Test Coupon 11-12-20

The above named individual is qualified in accordance with AWS D17.1.2001 to weld